Maj-Lena Linderson, 15p

1. Show with a sketch the long term energy balance of the earth system. Show and name the different types of radiation and the processes that affects the fluxes of these. Give APPROXIMATE numbers (in % of total incoming radiation from sun) of the fluxes. Which other types of energy fluxes are present in the energy balance of the Earth? Explain these! (5p)

2. Describe and explain similarities and differences between tropical and extratropical (mid-latitude) cyclones. Explaining figures are needed! (5p)

3. Which forces affects the direction and speed of the surface wind and in the free atmosphere (higher up in the atmosphere). Explain! How do these forces affect the global (large scale) pattern of surface winds? Give some examples! (5p)

Cecilia Akselsson, 10p

4. Igneous rock can be divided into groups, either based on where they were formed, or based on their chemical composition.
   
   a. Name the two groups that are based on where they were formed, and describe where rocks from the two different groups were formed. (2 p)
   
   b. Explain the difference between felsic and mafic rocks, and give one example for each. (2 p)

5. Podzolization is one of the soil-forming regimes. Describe briefly how the podzolization process works, which climate conditions that are required and what the layer structure in a podzol looks like. (3 p)

6. Scania is often said to be flat, but if you go biking you realize that this is not the case.

   a. In Scania there are several horsts, in the direction northwest-southeast, for example Hallandsåsen and Söderåsen. Which process led to the formation of those horsts? Explain briefly. (1 p)
   
   b. There are also other elongated landforms in Scania, with a completely different origin. Name two other types of elongated landforms and describe shortly their properties and how they were formed. (2 p)
Lena Ström, 5p

7. In ecosystems organisms interact and adapt to their environment. Name five environmental factors (four abiotic and one biotic) that often affect the organisms in earth’s ecosystems. For all five factors briefly describe how organisms adapt to maximize their performance if the factor is a limitation in the ecosystem.

Ulrik Mårtensson, 10p

8. Describe three different ways a soil particle can be transported in flowing water. Give name of transport, and describe how the particle moves in the fluid. (3p)

9. The flood plain is a central component in many landscapes. Describe how a flood plain develops (expand) over time given that the climatic and tectonic conditions are stable. Name three characteristic landforms frequently present on a developed, mature flood plain. (7p)